REMARKS

Claims 1, 2, 4-10, 14-17 are pending in this application, of which claims 1, 14, 16 and 17 have been amended. Reconsideration of the rejections in view of these amendments and the following remarks is respectfully requested.

Attached hereto is "Version with Markings to Show Changes Made," which is a marked-up version of the changes made to the specification and claims by the current amendment.

Rejections under 35 USC §112

Claims 1-2, 4-10, and 14-18 were rejected under 35 USC §112, first paragraph, as containing subject matter which was not described in the specification.

The Examiner alleged that "these claims fails [sic] to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement for the upper limit of the glass transition temperature of 50 °C in the application as originally filed."

The subject matter of the claim, however, need not be described literally in order for the disclosure to satisfy the description requirement. The MPEP eighth edition explains the description requirement issue about numerical range at 2163.05, at page 2100-171, as follows:

> III. RANGE LIMITATIONS
> With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure. In the decision in *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), the ranges described in the original specification included a range of "**25% - 60%**" and specific examples of "**36%**" and "**50%**." A corresponding new claim limitation to "at least 35%" did not meet the description requirement because the

> phrase "at least" had no upper limit and caused the claim to read literally on embodiments outside the "25% to 60%" range, however **a limitation to "between 35% and 60%" did meet the description requirement**.

In Table 1 of the present specification, all examples except for Example 6 satisfy the recitation "a glass transition point less than or equal to 50 °C." These disclosures of the specification convey **with reasonable clarity** to **those skilled in the art** that, as of the filing date sought, applicant was in possession of the invention as now claimed.

> Whenever the issue arises, the fundamental factual inquiry is whether the specification conveys **with reasonable clarity** to **those skilled in the art** that, as of the filing date sought, **applicant was in possession of the invention** as now claimed. . . . . An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set for the claimed invention.

MPEP 2163.02 at page 2100-167 right column.

Thus, the specification, especially Table 1, gives sufficient support for the recitation "a glass transition point less than or equal to 50 °C."

Claims 1-2, 4-10, and 14-18 were rejected under 35 USC §112, second paragraph, as being indefinite because it is not clear what is meant by derivatives.

The term "derivatives" means compounds which are derived from some other compound and maintain its general structure. The term "derivatives" are commonly used in patent claims. Among the patents issued from 1996 to 2001, 7217 patents include the term "derivatives" in their claims. Thus, it is submitted that claims 1-2, 4-10, and 14-18 are not indefinite.

Rejections under 35 USC §103(a)

Claims 1-2, 4, 6-10, 14, and 16-18 were rejected under 35 U.S.C. §103(a) as being obvious over Tsutsumi et al (U.S. Patent No. 6,031,019) in view of Patel et al (U.S. Patent No. 5,977,210); Claim 5 was rejected under 35 U.S.C. §103(a) as being obvious over Tsutsumi et al in view of Patel et al and further in view of either Polymer Science Dictionary or Fujisawa et al (U.S. Patent No. 5,977,136); Claim 15 was rejected under 35 U.S.C. §103(a) as being obvious over Tsutsumi et al in view of Patel et al and further in view of Nkansah et al (U.S. Patent No. 5,962,580); Claims 1-2, 4, 8-10, 14, and 16-18 were rejected under 35 U.S.C. §103(a) as being obvious over Patel et al in view of Satake et al (U.S. Patent No. 5,814,685); Claim 5 was rejected under 35 U.S.C. §103(a) as being obvious over Patel et al in view of Satake et al and further in view of Fujisawa et al; Claim 15 was rejected under 35 U.S.C. §103(a) as being obvious over Patel et al in view of Satake et al and further in view of Nkansah et al.

Independent claims 1, 14, 16 and 17 has been amended to recite "(c) 1 or more wt% of polymeric monomer including a polar group." This recitation is supported in the specification at page 11, line 19 and after. This feature contribute to the effect that a softening point is easily adjustable.

None of the cited references teaches or suggests claims 1, 4, 14, 16 and 17, as amended, having limitation "(c) 1 or more wt% of polymeric monomer including a polar group." For at least this reason, claims 1, 4, 14, 16 and 17 patentably distinguish over the cited references. Claims 2 and 4-10 depend upon claim 1, and patentably distinguish for at least the above reasons. Claim 15 depends upon claim 14, and is believed to be patentable for the above reasons. Claim 18 depends upon claim 17, and is believed to be patentable for the above reasons.

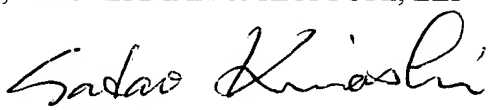
It is submitted that nothing in the cited references, taken either alone or in combination, teaches or suggests all the features recited in each claim of the present application. Thus, all pending claims are in condition for allowance. Reconsideration of the rejections, withdrawal of the rejections and an early issue of a Notice of Allowance are earnestly solicited.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph beginning at page 7, line 23, has been amended as follows:

A glass transition point of the copolymer is preferably at or below ~~70°C~~ 50°C and further preferably ranges from -30 through ~~70°C~~ 50°C. A softening point of the copolymer according to a flow tester is preferably at or below room temperature and further preferably ranges from 40 through 150°C. The reason why the above glass transition point and softening point are preferable is that the primary particle of a polymer after the ink reached on the recording medium forms a thin film shape and a recording layer of high color saturation (i.e., high quality image). If the glass transition point and softening point were higher than the above range, a sufficient film could not be formed whereby the color saturation might become lower (poorly reproducing its original image color) or an ink film might exfoliate (making the image harder to be fixed). If the glass transition point and softening point were lower than the above range, a film of insufficient strength could, for example, undesirably result in producing a blur of the image when rubbed with a finger (making the image harder to be fixed).

IN THE CLAIMS

Claims 1, 14, 16 and 17 have been amended as follows:

1. (Amended) Ink comprising:

a primary particle of a copolymer that has a glass transition point less than or equal to 50 °C and a volume average particle diameter ranging from 0.01 through 2 μm obtained from a radical polymeric monomer ~~selected from the group~~ consisting essentially of:

(a) 20 through 99 wt% of styrene and styrene derivative; ~~and~~

(b) 10 through 80 wt% of alkyl acrylate, alkyl methacrylate and derivatives of alkyl acrylate and alkyl methacrylate ~~thereof~~; and

(c) 1 wt % or more of polymeric monomer including a polar group;

a colorant; and

a solvent that is liquid at room temperature.

14. (Amended) Ink comprising:

a copolymer particle that has a glass transition point less than or equal to 50 °C and a volume average particle diameter ranging from 0.01 through 2 μm obtained from a radical polymeric monomer ~~selected from the group~~ consisting essentially of:

(a) 20 through 99 wt% of styrene and styrene derivative; ~~and~~

(b) 10 through 80 wt% of alkyl acrylate, alkyl methacrylate and derivatives of alkyl acrylate and alkyl methacrylate ~~thereof~~; and

(c) 1 wt % or more of polymeric monomer including a polar group;

a colorant; and

a solvent that is liquid at room temperature.

16. (Amended) An ink cartridge including a case and ink which is stored n said case and comprises:

a copolymer particle that has a glass transition point less than or equal to 50 °C and a volume average particle diameter ranging from 0.01 through 2 μm obtained from a radical polymeric monomer ~~selected from the group~~ consisting essentially of:

(a) 20 through 99 wt% of styrene and styrene derivative; and

(b) 10 through 80 wt% of alkyl acrylate, alkyl methacrylate and derivatives of alkyl acrylate and alkyl methacrylate ~~thereof~~; and

(c) 1 wt % or more of polymeric monomer including a polar group;

a colorant; and

a solvent that is liquid at room temperature.

17. (Amended) A recording device including a head and an ink cartridge supplying ink to said head, wherein said ink comprises:

a copolymer particle that has a glass transition point less than or equal to 50 °C and a volume average particle diameter ranging from 0.01 through 2 μm obtained from a radical polymeric monomer ~~selected from the group~~ consisting essentially of:

(a) 20 through 99 wt% of styrene and styrene derivative; and

(b) 10 through 80 wt% of alkyl acrylate, alkyl methacrylate and derivatives of alkyl acrylate and alkyl methacrylate ~~thereof~~; and

(c) 1 wt % or more of polymeric monomer including a polar group;

10 a colorant; and

11 a solvent that is liquid at room temperature.